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of the species represented by the embodiment of Figures 1A-1C. The Examiner has previously identified Claim 65 as generic to all three disclosed embodiments. In the Office Action mailed on March 13, 2002, the Examiner rejected all pending claims not deemed to be withdrawn.

The Examiner has also indicated that the election has been treated as an election without traverse. As described in more detail below, Applicant respectfully submits that the election should not be treated as an election without traverse because Applicant distinctly noted that Claim 53 was generic to more than the embodiment of Figure 1A.

Moreover, because Claims 56-58 and 67 are allowable if a generic claim is allowable, Applicant submits that at least Claims 53 and 65 are allowable and generic to at least the embodiments of Figures 1A and 2A, and accordingly requests reinstatement of withdrawn Claims 56-58 and 67.

Consequently, Applicant respectfully requests full consideration of the amendments and the remarks contained herein.

Amendments to the Claims

Amendments have been made to the claims to further clarify the subject matter that Applicant regards as the invention.

Applicant respectfully submits that the amendments add no new matter and are fully supported by the application as originally filed. For example, Applicant has amended Claims 53, 65, and 72 to more clearly recite that the various positions to which a substrate may be moved are "within the process chamber" or "within the chamber." Support for this language can be found in the Detailed Description of the Preferred Embodiment (*see, e.g.*, pp. 5-6, 8-10 of the application) and in the original claims (*see, e.g.*, Claims 55, 74, 75 and cancelled Claim 70). In addition, Claim 71 has been amended to reflect dependency from independent Claim 65, rather than cancelled dependent Claim 70.

Anticipation Rejections

The Examiner has rejected Claims 53-55, 59, 65, and 68-71 as being anticipated by Bahng (U.S. Patent No. 5,199,483) and Claims 65 and 68-71 as being anticipated by both Hughes (U.S. Patent No. 5,181,556) and Kroeker (U.S. Patent No. 6,000,227).

Applicant notes initially that each rejected independent claim now explicitly recites a thermal exchange position "within the process chamber" (Claim 65) or "within the chamber" (Claims 53 and 72). For example, Claim 65 recites "a process chamber" in which "high temperature processing" occurs, along with "a cooling position within the process chamber." Claims 53 and 72 both recite "a first position within the chamber and a second position within the chamber, the first position allowing treatment of the substrate," and the second position enabling "conductive heat transport." Thus, all pending claims include the limitation that substrate cooling occurs within the confines of the same chamber in which substrate treatment or processing occurs.

In contrast, Applicant submits that none of the cited references teach conductive thermal exchange across a small gap (*e.g.* between about 0.2 mm and 3.0 mm) in the same chamber in which substrate treatment or processing occurs. Bahng, in fact, states that substrate cooling and processing in the same chamber is undesirable: "if a wafer is subjected to a high-temperature process in a particular chamber and then must remain within that chamber until the wafer is sufficiently cool to move, the throughput of the system is adversely affected." (Bahng, Column 1, 56-60). As a result of this perceived problem, Bahng teaches utilizing a "***dedicated*** cool-down chamber, thereby increasing the throughput of an associated ***multi-chamber*** semiconductor wafer processing system." (Column 2, 39-43) (emphasis added). Thus, Bahng teaches against a one chamber system and, instead, discloses a multiple chamber system, with a dedicated cool-down chamber.

Likewise, Hughes teaches a "substrate cooling station" that is not a part of, but is, instead, only "operatively secured to the main vacuum chamber housing." The "substrate cooling station" is "effectively sealed thereto by virtue of [an] O-ring seal." (Hughes, Column 3, lines 46-51). Moreover, not only is the cooling station separate from the processing chamber, but the "substrate cooling station 1 may also include a pair of external handles 25 to facilitate removal and installation of the cooling station 1." (Column 4, lines 41-43). The cooling station taught by Hughes is thus both physically separate and also detachable from the "main vacuum chamber."

Similarly, Kroeker discloses "a wafer cooling system built into the transfer chamber." (Kroeker, Column 2, lines 32-35). Kroeker distinguishes "processing chambers" in which a substrate may be treated, from "transfer chambers" which hold a substrate for transport from one "processing chamber" to another "processing chamber." (Column 1, lines 13-30). Thus, as with Bahng and Hughes, rather than teaching thermal exchange and processing or treatment within the same chamber, Kroeker teaches cooling outside of the chambers in which substrate processing or treatment occur.

Accordingly, in light of the remarks herein, Applicant respectfully traverses the rejections insofar as they apply to independent Claims 53, 65, and 72 and submit that the pending claims are patentably distinguishable. Applicant has not addressed the further anticipation rejections of dependent claims as being moot in view of the remarks herein. However, Applicant expressly does not acquiesce in the Examiner's findings not addressed herein. Indeed, Applicant submits that the dependent claims recite further distinguishing features of particular utility.

Obviousness Rejection

The Examiner has rejected Claims 72-76 as being unpatentable over Ohmine et al. (U.S. Patent No. 5,991,508) in view of Bahng. The Examiner stated that Ohmine et al. "discloses all the claimed limitations except a heat exchange member" and that "Bahng discloses a heat exchanger comprising a processing chamber 14; a substrate support/movable member 74; and a heat exchange member 18 for the purpose of actively cooling the substrate." The Examiner indicated that Ohmine et al. and Bahng may be combined because they are "both form the same field of endeavor and/or analogous art".

Regarding the suggestion to combine Ohmine et al. and Bahng, Applicant notes that two references may not be combined simply because they are in the same field. *See In re Dance*, 48 U.S.P.Q. 2d 1635 (Fed. Cir. 1998) ("When the references are in the same field as that of the applicant's invention, knowledge thereof is presumed. However, the test of whether it would have been obvious to select specific teachings and combine them as did the applicant must still be met by identification of some suggestion, teaching, or motivation in the prior art...").

Moreover, even if combined, Ohmine et al. and Bahng do not teach all the elements of Applicant's claimed invention. Applicant notes again that Claims 72-76 recite substrate cooling and processing or treatment within the same chamber. As discussed above, however, Bahng

teaches a "dedicated cool-down chamber" separate from the process chamber. Thus, Ohmine et al. in combination with Bahng does not teach substrate cooling in the same chamber as that used for substrate processing.

Accordingly, Applicant submits that the combination of Ohmine et al. and Bahng does not teach or suggest each of the recited features in the pending claims, and that the claims are accordingly allowable over the art of record.

Request for Reinstatement of Claims Directed to Second Embodiment

The Examiner's has treated the election as an election without traverse because Applicant "did not distinctly and specifically point out the supposed errors in the restriction requirement." Regardless of whether or not traversed, Applicant requests reinstatement of Claims 56-58 and 67. Applicant previously reiterated the Examiner's understanding that Claims 56-58 and 67 were considered withdrawn until a generic claim was allowed, in view of the previous election of the species represented by the embodiment of Figures 1A-1C. Applicant also noted that the Examiner had identified Claim 65 as generic to all three disclosed embodiments. Applicant additionally identified Claim 53 as generic to at least the embodiments of Figures 1A and 2A. Moreover, Applicant stated Applicant's belief that the pending claims were allowable subject matter. Accordingly, Applicant properly requested reinstatement of withdrawn Claims 56-58 and 67.

In addition, with respect to the election with traverse, Applicant submits that the indication that Claim 53 is generic to at least the embodiments of Figures 1A and 2A was sufficient to distinctly and specifically point out the errors in the restriction requirement.

Moreover, in view of the preceding discussion of the rejections under 35 U.S.C. §§102-103, Applicant again submits that at least Claims 53 and 65 are allowable and that both of these claims are generic to the embodiments of Figures 1A and 2A. Accordingly, Applicant respectfully requests reinstatement of withdrawn Claims 56-58 and 67, which Applicant submits also read upon the embodiment represented by Figure 2A.

CONCLUSION

In view of the foregoing remarks, Applica...s request entry of the amendments and reconsideration of the rejections. If some issue remains that the Examiner feels may be addressed

by Examiner's amendment, the Examiner is cordially invited to call the undersigned for authorization.

Attached hereto is a separate paper entitled **VERSION OF THE AMENDMENTS SHOWING CHANGES MADE**, in which additions are shown in double underlining and deletions are shown ~~stricken through~~.

Respectfully submitted,

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Dated: April 22, 2007

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VERSION OF THE AMENDMENTS SHOWING CHANGES MADE

Claim 70 has been cancelled.

53. (Amended) A processing reactor for high temperature treatment of substrates, the reactor comprising:

a plurality of walls defining a chamber;

a substrate support structure within the chamber;

a heat exchange member;

a movable element; and

a drive mechanism for moving the movable element between a first position within the chamber and a second position within the chamber, the first position allowing treatment of the substrate upon the support structure, the second position allowing the heat exchange member to be spaced from the substrate by between about 0.2 mm and 3.0 mm to enable conductive heat transport across a gap between the heat exchange member and the substrate in the second position, the substrate being seated upon the support in each of the first position and the second position.

65. (Amended) A cooling mechanism in a substrate processing system, the mechanism comprising:

a support structure, the support structure configured to support a substrate in a process chamber during high temperature processing; and

an actively cooled thermal exchange member,

wherein the support structure and the thermal exchange member are relatively movable between a cooling position within the process chamber, in which the substrate is supported upon the support structure between about 0.2 mm and 3 mm from the thermal exchange member, and a substrate load position, in which a wafer handler can place the substrate upon the support structure.

71. (Amended) The cooling mechanism of Claim ~~70~~65, wherein the substrate is supported upon the support structure between about 0.5 mm and 1.5 mm from the cooling element in the cooling position.

72. (Amended) A processing reactor for high temperature treatment of substrates, the reactor comprising:

a plurality of walls defining a chamber;

a movable substrate support structure;

a heat source for heating a substrate upon the support structure within the chamber;

a thermal exchange member; and

a drive mechanism for moving the support structure between a first position within the chamber and a second position within the chamber, the first position allowing treatment of the substrate upon the support structure ~~within the chamber~~, the second position allowing the thermal exchange member to be spaced from the substrate by between about 0.2 mm and 3.0 mm to enable conductive heat transport between the thermal exchange member and the substrate.